

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000609**Date Inspected:** 12-Oct-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Ye Yongjun**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Mock Up**Summary of Items Observed:**

Elevation 77:

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the fabrication of the Mock Up. The QA Inspector randomly observed ZPMC welding personnel performing heat straightening operations on longitudinal stiffener piece mark mp5 on Skin Plate E, Sub-Assembly (SA) MUSA-MA1. The heat was being applied above Weld Joint (WJ) 3 with hydraulic jacks applying tension from the opposite side. The attached photograph provides additional detail.

The QA Inspector observed a ZPMC helper utilizing a grinder to remove slag and leftover weld metal after the burning off of the lifting lugs with carbon air arc Skin Plate D, SA MUSA-MA5. The QA Inspector also observed the same ZPMC helper blending the ends of the welds attaching the connection plates piece marks p596 and p597 to longitudinal stiffeners piece marks mp8 (2 each), mp3 and mp4 of Skin Plate D, SA MUSA-MA5.

Elevation 89:

The QA Inspector randomly observed welding being performed for the fabrication of the Mock Up at elevation 89.

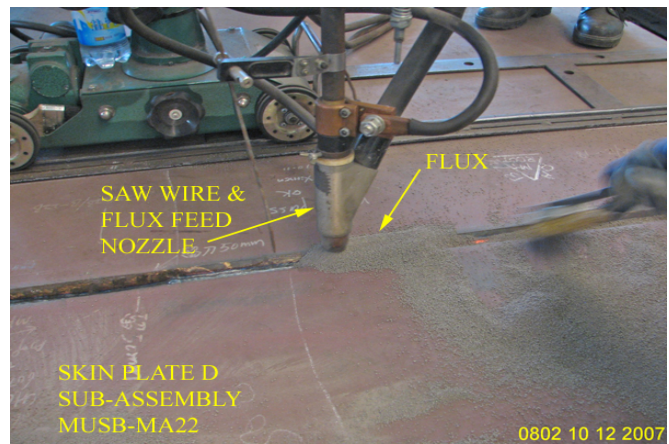
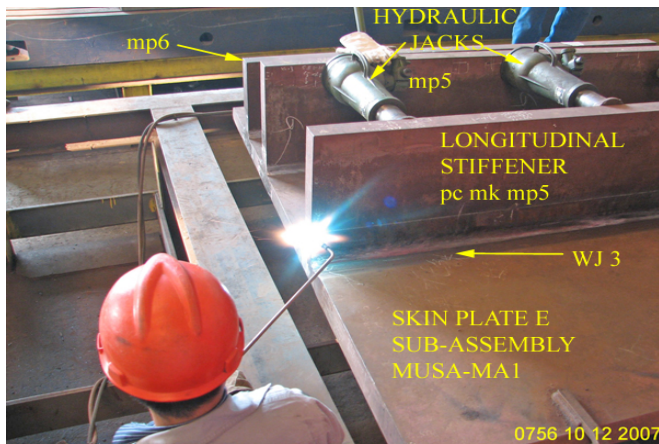
The QA Inspector randomly observed ZPMC qualified welder Han Changou utilizing the Submerged Arc Welding (SAW) process to weld the seam weld on Skin Plate D, SA MUSB-MA22. Mr. Han was utilizing ZPMC approved Weld Procedure Specification (WPS) WPS-B-T-2221-B-U3C-S-1 for the 300 millimeter Complete Joint Penetration (CJP) section of the weld, and ZPMC approved WPS WPS-B-T-2321-B-P3-S-1 for the balance of the

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weld which was a Partial Joint Penetration (PJP) weld. The QA Inspector observed ZPMC CWI Xu Le Feng monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 623 amps, welding voltage 32 volts with a travel speed of 620 millimeters per minute for side 1 and 624 amps, 32 volts with a travel speed of 576 millimeters per minute for side 2. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC Non Destructive Testing (NDT) Technician Zhou Dongyun utilizing the Magnetic Particle Testing Method (MT) to examine 100% of the tack welds in PJP Weld Joint (WJ) number 16, attaching piece marks mp502 to MA38 of Skin Plate E, Sub-Assembly MUSB-MA38. The QA Inspector also performed 100% MT verification examination of the tack welds. There appeared to be no indications. The following photograph provides additional detail.



Summary of Conversations:

The QA Inspector asked ZPMC CWI Ye Yongjun how many WPS's were being used for the welding of the seam weld on Elevation 89 Skin Plate D, SA MUSB-MA22, and Mr. Ye said that there were 2. The QA Inspector then asked Mr. Ye why the parameters on the fill passes did not match the parameters on the 2 WPS's that were listed, and Mr. Ye informed the QA Inspector that the WPS's for the fill passes were different than the WPS's for the root and hot pass. The QA Inspector asked Mr. Ye again how many WPS's were being used for this welding and Mr. Ye informed the QA Inspector that there were 4 WPS's being used. Mr. Ye informed the QA Inspector that there

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was 1 WPS each for the root and hot passes on the CJP and PJP sections of the weld, and 1 each WPS for the fill passes on the CJP and PJP sections of the weld. The QA Inspector verified all 4 WPS's and the weld parameters of each, and they appeared to be in compliance. The QA Inspector observed Mr. Ye adding the other 2 WPS's for the fill passes to the Quality Control Sheet that ZPMC was using to record the welding parameters for this weld.

The QA Inspector also discussed with Mr. Ye, ZPMC QA Representatives Shen Xue Jun, Li Xui Yang and Zhang Jiadi, about putting up some sort of protection against weld flash after having been repeatedly exposed to same.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Franco,Charlie
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Quality Assurance Inspector

Reviewed By:	Cochran,Jim
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QA Reviewer
